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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,331	12/20/2001	Isao Endo	KON-1701	3218

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EXAMINER

CHEN, SOPHIA S

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 11/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/029,331

Applicant(s)

ENDO ET AL.

Examiner

Sophia S. Chen

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 4 (page 31, line 12). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 28 (Fig. 1(b)), a, b, c, CL (Fig. 6(a)), PH (Figs. 6(a) and 6(b)), T (Fig. 6(b)), 1 (Figs. 7(a), 8, 9(a), 9(b), and 9(c)), 1' (Figs. 7(a), 7(b), and 8), 2 (Figs. 7(a), 7(b), 8, and 10(a) through 10(f)), 3 (Figs. 7(a) and 8), 3' (Figs. 7(b) and 8),  $f_1$ ,  $f_2$ ,  $f_3$  (Fig. 7(c)), 3-1 (Figs. 10(a), 10(b), 10(c), and 10(f)), 3-2 (Figs. 10(a), 10(b), and 10(e)), and 3-3 (Figs. 10(c) and 10(e)). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to because the sectional cross-hatching of reference numeral 33 is incorrect. See MPEP §608.02. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

4. The abstract of the disclosure is objected to because of the inclusion of legal phraseology, such as “comprises” (page 186, line 2), “said” (page 186, lines 4, 5, 7, 8, and 10), “means” (page 186, line 4), and “comprised” (page 186, line 6). Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informality: page 31, line 17, “82” should be “21”. Appropriate correction is required.

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Objections***

7. Claims 1-15 are objected to because of the following informalities:

a. Claim 1, line 17, “the surface” should be “a surface” because it is the first time to use this terminology.

b. Claim 1, line 21, “the leading edge” should be “a leading edge” because it is the first time to use this terminology.

c. Claim 1, lines 23-24, “the movement direction” should be “a movement direction” because it is the first time to use this terminology.

d. Claim 1, line 27, “the rotational axis” should be “a rotational axis” because it is the first time to use this terminology.

- e. Claim 4, line 16, "the surface" should be "a surface" because it is the first time to use this terminology.
- f. Claim 4, line 20, "the leading edge" should be "a leading edge" because it is the first time to use this terminology.
- g. Claim 4, line 26, "the desired cleaning" should be "a desired cleaning" because it is the first time to use this terminology.
- h. Claim 9, line 19, "the surface" should be "a surface" because it is the first time to use this terminology.
- i. Claim 9, line 30, "the effective cleaning area" should be "an effective cleaning area" because it is the first time to use this terminology.
- j. Claim 9, line 32, "the effective transferring area" should be "an effective transferring area" because it is the first time to use this terminology.
- k. Claim 9, line 33, "the effective charging area" should be "an effective charging area" because it is the first time to use this terminology.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

- 8. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is considered to be indefinite because there are no antecedent bases for "said latent image holding member" (line 22) and "the standard state" (line 28).

Claim 2 is considered to be indefinite because there is no antecedent basis for "the contact load" (lines 1-2).

Claim 4 is considered to be indefinite because there are no antecedent bases for "the external agent" (line 10), "the transfer zone" (line 12), "said transfer zone" (lines 14 and 28), and "said latent image holding member" (line 21).

Claim 5 is considered to be indefinite because there is no antecedent basis for "the control mechanism" (lines 1-2).

Also, claim 5 is considered to be indefinite because it is unclear whether the claim should be ended at the first period (line 5) or the second period (last line). (Each claim begins with a capital letter and ends with a period. Periods may not be used elsewhere in the claims.) See MPEP §608.01(m). Therefore, it is unclear whether or not the disclosure after the first period is part of the claim limitation.

Claim 6 is considered to be indefinite because there are no antecedent bases for "the specified toner image forming condition" (lines 1-2), "said control mechanism" (lines 2-3), "said image forming unit" (line 3), and "the blade effect" (line 4).

Also, claim 6 is considered to be indefinite because it is unclear whether the claim should be ended at the first period (line 5) or the second period (last line). (Each claim begins with a capital letter and ends with a period. Periods may not be used elsewhere in the claims.) See MPEP §608.01(m). Therefore, it is unclear whether or not the disclosure after the first period is part of the claim limitation.

Claim 9 is considered to be indefinite because there are no antecedent bases for "the axis" (lines 5 and 13), "the external agent" (line 11), "the transfer zone" (line 15),

Art Unit: 2852

“said transfer zone” (line 17), “said latent image holding member” (line 21), “said transfer unit” (line 32), and “said charging unit” (line 33).

Claim 10, line 2, “a bias voltage applying means” is considered to be indefinite because it is unclear whether the voltage applying means is the same or different from the bias voltage applying means of claim 9, lines 23-24.

Claim 11, line 2, “a cleaning roller” is considered to be indefinite because it is unclear whether the cleaning roller is the same or different from the cleaning roller of claim 9, lines 19-20.

Claim 13, line 2, “a cleaning roller” is considered to be indefinite because it is unclear whether the cleaning roller is the same or different from the cleaning roller of claim 9, lines 19-20.

### ***Allowable Subject Matter***

9. Claims 1-15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest an image forming apparatus comprising a cleaning roller and a cleaning blade, wherein the cleaning blade being rotationally driven from a standard state, the leading edge coming into contact with the surface a photoreceptor while its total shape being not deformed, to a working state, its entire body being curved, and in the standard state, satisfying the Conditions (1) and (2): Condition (1): straight line T drawn between contact position P of the leading edge

of the cleaning blade with the photoreceptor and a rotationally driven center axis O being positioned between tangential line N at the contact position P and the cleaning blade, and Condition (2): contact angle of the cleaning blade with respect to the tangential line of the photoreceptor at the contact position being from 0 to 30 degrees (claim 1); toner comprising a lubricant as an external agent, and a control mechanism comprising a specified toner image forming function to form a toner image for maintaining a blade effect to maintain a desired cleaning effect of the cleaning blade (claim 4); and the image forming apparatus satisfying the following formula:  $W2 < W1$  and  $W3 - W1 \leq 30$  (in mm), wherein W1 being an effective cleaning area obtained by the cleaning roller, W2 being an effective transferring area, and W3 being an effective charging area (claim 9).

#### ***Citation of Pertinent Prior Art***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Maruyama et al., U.S. Pat. No. 5,430,527, discloses an image forming apparatus comprising a cleaning width being longer than a charging width.

Suwa et al., U.S. Pat. No. 5,646,718, discloses an image forming apparatus comprising a cleaning width being longer than a transfer width and a charging width.

Kizaki et al., U.S. Pat. No. 5,915,156, discloses an image forming apparatus comprising a cleaning roller, a cleaning blade, and the cleaning blade being able to



move from a standard state (away from a photoreceptor) to a working state (contacting the photoreceptor).

Sakakibara et al., U.S. Pat. No. 6,029,025, discloses an image forming apparatus comprising a cleaning roller, a cleaning blade, and the cleaning blade being able to move from a standard state (away from a photoreceptor) to a working state (contacting the photoreceptor).

Endo et al., U.S. Pub. No. US 2002/0009316 A1, discloses an image forming apparatus comprising a cleaning roller; a cleaning blade; a contact angle of the cleaning blade with respect to a tangential line of a photoreceptor at a contact point being from 0 to 40 degrees; a contact load of the cleaning blade being from 1 to 30 g/cm; a bias voltage applying means being a constant current power source; toner particles having a volume average particle diameter of 8.5  $\mu\text{m}$  or less; and the toner particles being prepared employing a polymerization method.

Abe, JP 2000-231320, discloses an image forming apparatus comprising a cleaning roller and a cleaning blade.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (703) 308-7617. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (703) 308-1373. The fax phone numbers

Art Unit: 2852

for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sophia S. Chen  
Primary Examiner  
Art Unit 2852

SSC  
November 6, 2002